DOCUMENT RESUME

ED 370 260 EC 301 940

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TITLE	Interventions To Promote Cognitive Skills: DEC Recommended Practices.
PUB DATE	93
NOTE	9p.; In: DEC Recommended Practices: Indicators of Quality in Programs for Infants and Young Children with Special Needs and Their Families, see EC 301 933.
PUB TYPE	Viewpoints (Opinion/Position Papers, Essays, etc.) (120) -- Information Analyses (070)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Cognitive Development; *Disabilities; Early Childhood Education; *Early Intervention; Educational Assessment; *Educational Practices; *Educational Quality; Program Development; Special Education; Special Needs Students; Teaching Methods
IDENTIFIERS	Council for Exceptional Children

ABSTRACT

This paper lists practices recommended by the Council for Exceptional Children's Division for Early Childhood concerning the promotion of cognitive skills in early intervention and early childhood special education programs for infants and young children with special needs and their families. An introductory section differentiates between three pairs of terms found in the cognitive intervention literature: learning and development, competence and performance, and elicited and enabling experiences. Based on these terms, the paper notes that the major emphasis of intervention practices ought to be promotion of development and not just enhancement of learning, that optimal performance will most likely occur when learning experiences match a child's level of competence; and that optimal development and performance will most likely occur by using enabling experiences that promote competence and a sense of self-efficacy. Eight recommended practices for interventions to promote cognitive skills are then listed. (JDD)

Interventions to Promote Cognitive Skills

Carl J. Dunst

The eight recommended practice indicators for cognitive intervention specify a number of considerations that need to be addressed when promoting child competence. The indicators have as their bases the assumptions that children are active rather than passive recipients of information; learn about their own capabilities as well as the propensities of others as a result of interventions; and best learn in situations where caregivers are responsive rather than directive during learning episodes.

Cognitive development entails progressive changes in children's acquisition of knowledge and skills, and the use of these competencies in everyday life as a basis of building a repertoire of cognitively-related capabilities. Intervention practices enhance these acquisitions in ways that permit children to adapt to a broad range of demands and challenges in interactions with persons and objects and during differing type. of everyday events and daily routines.

Full appreciation of the implications of the cognitive intervention indicators is best understood by differentiating between three sets of terms found in the cognitive intervention literature: learning and development, competence and performance, and elicited and enabling experiences.

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Learning and Development

Learning may be defined as a "relatively permanent change in behavior which occurs as a result of experience" (Tarpy, 1975, p. 4). To say that learning involves a permanent change in behavior, we mean that an addition or modification has occurred that differentiates the child before and after he or she has been exposed to some type of learning experience (Gagne, 1970). To say that learning results from experience, we mean exposure to some type of opportunity that directly influences behavior.

Development may be defined as a relatively permanent change in the adaptive processes used to acquire, store, and use information as a result of experience (Dunst, 1981; Rowland & McGuire, 1971). To say that development involves permanent change in adaptive processes, we mean that an addition or modification has occurred in the ways in which behavior is organized and manifested (Piaget, 1970; Rowland & McGuire, 1971). In developmental terms, adaptive processes refers to the stage-like changes that permit a child to interact with the environment in a more competent manner.

The difference between learning and development may be understood by the ways in which change is typically measured. Learning is often measured in terms of the frequency, duration, and rate of occurrence of behavior (e.g., the number of times a child says a certain sound or word during a specified period of time or under specified conditions). Development in contrast is generally measured with respect to changes in the way information is acquired and utilized. It is most often assessed with respect to attainments of different levels or stages of functioning representing different cognitive capabilities (e.g., trial and error problem solving vs. planned problem solving).

Based on the distinction made above, the following relationship may be stated: All development involves learning, but not all learning produces development. The implication of this relationship for intervention practices is as follows: the goal of intervention should be promotion of development and not simply enhancement of learning. If learning were the goal of intervention practices, we would likely fool ourselves into believing that a child became more able and competent, when in fact all we would do is have a child do more of the same type or class of behavior at the same level or stage of development. More is not necessarily better unless it results in significant and discernible changes in the ways in which children acquire, process, and employ what they have learned. Significant and discernible changes in knowledge-acquisition and skill-use are major indicators of development growth.

Competence and Performance

Competence may be defined as the achievement and availability of certain levels and forms of functioning, both of which reflect the capacity to acquire, store, and use information in certain ways (Davidson & Sternberg, 1985). The capacity to acquire and utilize information in turn affects the capacity to "call into play" the full range of behaviors that are indicative of the most advanced processes of development of which a child is capable. Stated more simply, competence is the highest form of functioning that a child is capable of at a given point-in-time. To say that a child has achieved a certain level of competence means that he or she has achieved a certain stage of development.

Performance may be defined as the utilization of competence as a result of experiences that require the child to make adaptations to different demands and challenges (Davidson & Sternberg, 1985). Performance is what we use to ascertain that a child has

achieved a certain level of competence. Performance factors determine and influence the use of competence in different situations (e.g., parent expectations and beliefs regarding child capabilities) (Siegel, 1985). To say that a child is competent, we mean that he or she can perform the necessary behaviors indicative of certain levels of functioning.

The relationship between competence and performance is both interesting and useful. Optimal performance occurs when learning experiences match the level of competence of the child (Hunt, 1971). That is, a child is most likely to show and maintain interest in learning opportunities as well as benefit from these experiences if learning requires the child to perform behaviors that are at the level of highest development of the child. Experiences below that level tend to bore the child, whereas experiences significantly beyond the child's capabilities become frustrating.

The relationship between competence and performance has at least one major implication for intervention practices: The experiences that are afforded children in early intervention programs must be carefully selected and utilized so that learning matches competence, which in turn optimizes performance and thus promotes development and the capacity to become more capable and competent.

Elicited and Enabling Experiences

All of the above four concepts--learning, development, competence, and performance--have as part of their definitions the notion that environmental experiences are major factors that influence behavior. Until now, any definition or explanation of the term experience has been ignored, yet this is the most important aspect of learning, development, competence, and performance. This is the case because early intervention has as its major presupposition

the explicit contention that educational and therapeutic experiences are an essential ingredient for affecting behavior change. However, as was noted before and will be again pointed out, misunderstanding about efficacious and nonefficacious experiences often results in the use of less than optimal learning opportunities. It is, therefore, of considerable benefit to distinguish between elicited and enabling learning opportunities as part of promoting child competence.

The term elicited experiences refers to a class of environmental events that evoke behavior from children but which do not produce permanent changes in the child's behavior repertoire. As indicated above, a part of the definitions of both learning and development is that permanent behavior change results from experience. As it turns out, a considerable amount of what is done in the name of "early intervention" does not produce permanent behavior change. Stimulation used to evoke attention and other responses from children are perhaps the most frequently used forms of elicited experiences (Dunst, 1984). Consequently, behaviors that must be maintained by external reinforcing consequences are a subclass of elicited experiences because the permanence of the behavior is dependent upon the availability of external reinforcers and are not maintained by self reinforcing influences.

In contrast, enabling experiences produce both learning and development. Enabling experiences are opportunities that both strengthen child performance and promote competence by producing permanent changes in behavior. What maintains behavior is not external influences but rather the acquisition of a clear sense of competence (self-efficacy) resulting from experiences interacting with the social and nonsocial environment.

The difference between elicited and enabling experiences has one major implication

for intervention practices: Whatever experiences are used to promote optimal performance, they must not only result in observable and permanent changes in behavior they must also promote a sense of self-efficacy in the child. For it is the sense of self-efficacy (cognitive efficacy) that is perhaps the most important factor influencing behavior permanency.

Summary

The material briefly reviewed here can be summarized in a way that ties all the notions described above together. First, the major emphasis of intervention practices ought to be promotion of development and not just enhancement of learning since the former encompasses the latter and is likely to have the greatest influences on behavior change. Second, optimal performance will most likely occur when learning experiences match a child's level of competence. To do so will maintain interest and increase the likelihood of further development. Third, optimal development and performance will most likely occur by using enabling experiences that promote competence and a sense of self-efficacy. If early interventionists take development into consideration as the goal of intervention, optimal performance as the target of intervention, and enabling experiences as the method of producing behavior change, the benefits that will be realized are more likely to have long lasting effects.

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DEC Recommended Practices
Interventions to Promote Cognitive Skills

Cognitive interventions and curricula are based upon theories and models that specify the progressive changes in children's knowledge, cognitive skill acquisition, and skill use. Cognitive skills cover such diverse capacities as attention, memory, purposeful planning, decision making, communication, discrimination, and idea/competence generation. Intervention practices enhance the acquisition and use of knowledge and cognitive skills that permit social adaptation to a broad range of demands and challenges involving a range of objects, persons, and events.

COG1. Cognitive assessment procedures focus on the identification of persons and environmental factors that promote children's acquisition of cognitive skills and competencies with other people, objects, and events.

COG2. Cognitively-based curricula are based upon processes of human learning that progress from awareness to exploration to inquiry to utilization.

COG3. Cognitively-based curricula enhance children's knowledge about their own capacities as they relate to objects and people in different settings.

COG4. Interventions encourage child-initiated and child-directed learning and mastery of skills in social and nonsocial environments.

COG5. Intervention practices emphasize children's integration of previously and newly acquired knowledge and skills.

COG6. Professionals use a broad range of teaching methods and instructional strategies to enhance engagement in daily routines and activities that match children's developmental abilities and interests.

COG7. Teaching methods emphasize reciprocity and joint-action within the child-caregiver dyad as a primary social context for children to learn cognitive skills.

COG8. Professionals use adaptive and augmentative devices and equipment (when appropriate) to promote acquisition of cognitive skills and competencies by allowing children to actively participate in the environment or learning activity.